

Picture Frame

The invention relates to a picture frame, particularly an alternate frame.

Known picture frames serve to hold or stretch pictures. In a conventional frame for stretching canvas or the like, frame ledges are glued or connected to each other otherwise at the frame corners. Then, the canvas is fastened at the rear side of the individual frame ledges and stretched over the frame ledges forming the frame. Further, alternate frames are known where the pictures can be exchanged. Such alternate frames are comprised of frame ledges interconnected to form a frame, for example, into which a glass pane and a rear wall can be laid, the exchangeable picture being disposed between the glass pane and the rear wall. Such alternate frames have the disadvantage that they are heavy because of the provision of the glass pane and that the glass may cause disturbing light reflections. Further, such picture frames have the disadvantage that it is troublesome to exchange individual pictures.

Known picture frames, for example, are only poorly suitable for transportation since the picture frame itself cannot be dismounted or only with considerable trouble.

It is the object of the invention to provide a picture frame that can be easily mounted and dismounted, respectively.

Another object of the invention is to permit a simple exchange of pictures.

These objects are solved, according to the invention, with the features of claims 1 to 7, respectively.

The picture frame according to the invention comprises several frame ledges, typically four, which can be assembled to form a frame. Via connect-

ing elements, the frame ledges are releasably connectable. In order to permit a simple mounting or dismounting of the picture frame, insertion pockets are provided in the frame ledges into which the connecting elements can be inserted. Thus, in case of a square picture frame, the picture frame is simply mounted or dismounted by fitting together four corner connectors with four frame ledges. For dismounting it, the connecting elements simply have to be withdrawn from the insertion pockets of the frame ledges. Thus, mounting and dismounting the picture frame according to the invention is extremely simple. It is also possible to provide the insertion pockets at the connecting elements and to insert the frame ledges into them. The insertion pockets need not necessarily be completely closed pockets. Preferably, however, the pockets are configured such that they at least partially surround and thus fix the element to be inserted. This has the advantage that it is not required to fix the inserted element in the insertion pocket or at the respectively other element, i.e. the frame ledge or the connecting element.

To avoid that the frame ledges and the connecting elements slip apart, the connection of the frame ledges with the connecting elements is preferably effected by friction. To achieve a sufficient friction ensuring a secure connection of the frame ledges with the connecting elements, friction elements are preferably provided at the frame ledges and/or the connecting elements. Preferably, they are configured such that the friction is not too high so that the connecting elements and the frame ledges can be pulled apart again by hand. As friction elements, for example, compressible elastic elements can be provided which are compressed when the frame ledge or the connecting element is inserted into the insertion pocket and produce the desired friction thereby. It is particularly preferred to provide lamellae as friction elements, which are connected with the frame ledges or the connecting elements and are elastically deformed when they are inserted into the insertion pocket. Due to their elastic deformation, the lamellae produce a retaining force or friction within the insertion pocket. The advantage of friction elements consists in that they are subject to minor wear symptoms only even if they are

inserted and pulled out often. Preferably, several lamellae are provided for each insertion connection. It is particularly preferred to arrange the lamellae substantially vertical to the insertion direction.

In a particularly preferred embodiment of the invention, the picture is fastened to the picture frame by means of fastening elements provided at least at two ledge rear sides of the frame ledges, the fastening elements preferably permitting a releasable connection between the one or more first fastening elements fastened to the frame ledges and the one or more second fastening elements provided at a picture. The fastening elements are Velcro fasteners, for example. By providing the fastening elements at the rear side of the frame ledges, the picture can be stretched over the front of the frame which then is no longer visible. Preferably, all frame ledges are provided with corresponding fastening elements at their ledge rear sides so that in a rectangular frame, the picture can be stretched in horizontal as well as in vertical direction.

A second independent invention consists in providing a picture frame of several interconnected frame ledges, the ledge rear sides of at least two frame ledges being provided with first fastening elements for being releasably connected with a second fastening element provided at a picture to be stretched. Thus, the picture is fastened to the frame in the afore-described manner, wherein the frame itself, however, may also consist of firmly interconnected frame ledges. It is particularly preferred, however, that the frame, as a frame adapted to be fitted together, consists of frame ledges and connecting elements as described above.

The preferred embodiments described hereinafter refer to the two above embodiments of the invention.

Preferably, the ledge rear sides are respectively provided with first fastening elements which cooperate with second fastening elements provided at the

picture and are releasably connected with them in a nondestructive manner. By providing several fastening elements at each ledge rear side, a good stretching of a picture over the frame and thus the manufacture of a plane frameless picture is easily possible. Preferably, the fastening elements which are preferably Velcro fasteners extend over the entire length of the ledge rear sides.

For the reception of the fastening elements - which preferably are strip-shaped Velcro bands - in an accurate position, the rear sides of the frame ledges preferably comprise a groove into which the first fastening element can be inserted.

For the reception of a wall mounting and/or spacer, at least one frame ledge comprises a groove extending in longitudinal direction of the frame ledge. The wall mounting and/or a spacer can be inserted into this groove. Preferably, all frame ledges comprise such a groove for receiving a wall mounting and/or a spacer so that the picture frame according to the invention can be hung on any frame ledge. Thus, a rectangular picture frame can be optionally suspended as a vertical or an oblong format.

The pictures adapted to be stretched onto the picture frame according to the invention are preferably of an elastic material, particularly of cloth. Since the picture is fastened at the ledge rear sides of the frame ledges, the picture can be stretched like a canvas. Thus, a picture printed or painted on a very thin cloth, for example, is adapted to be stretched without any creases. If necessary, such cloth pictures or the like are washable. By simply releasing the pictures from and fastening them to the picture frame, the pictures can be exchanged quickly. This is advantageous in restaurants or hotels, for example, if pictures matching a corresponding occasion shall be hung up or if the appearance of the restaurant or the hotel lobby shall be changed, e.g., in dependence on the seasons.

The picture frame according to the invention is preferably made of aluminum profiles connected via corner portions made of plastic. This has the advantage that cloth pictures, for example, can be hung up immediately after being washed, i.e., in a state of being still damp. Thereby, the pictures are smoothed automatically.

Since the picture frame according to the invention together with a picture of cloth is a light picture being relatively insensitive with respect to humidity and temperature variations, the picture frame according to the invention together with a cloth picture or the like is particularly advantageous for being suspended in ships. Apart from the wall mounting, the spacer(s) may be configured such that they permit a fixing at the wall so that the picture is always parallel to the wall even if the ship is in an oblique position, for example.

Another independent invention relates to a wall mounting that is particularly suitable for mounting the afore-described picture frames. According to the invention, a spirit level is integrated in the wall mounting. Thus, the wall mounting can be easily fastened at the wall in a horizontal position. Then, the picture frame only has to be laid upon or hung into the wall mounting and automatically, it hangs horizontally. Thus, it is no longer necessary to displace respective wall mountings in order to avoid that the picture is crooked. For mounting the wall mounting to the wall, it preferably comprises two mounting slots extending at an angle with respect to each other. Preferably, the mounting slots extend at right angles to each other, one slot being preferably oriented horizontally and the other one being preferably oriented vertically. Thereby, it is possible to orient the wall mounting horizontally in a simple manner. Further, it is possible to detachably or releasably connect the integrated spirit level with the wall mounting. This has the advantage that the production of the wall mountings is cheaper since not each wall mounting is required to have a spirit level but that it is possible to

mount several wall mountings in succession with a spirit level that is connectable with the wall mounting.

Hereinafter, the invention is explained in detail with respect to a preferred embodiment thereof with reference to the accompanying drawings.

In the Figures:

Fig. 1 is a schematic plan view of a picture frame without a picture, which is adapted to be fitted together,

Fig. 2 shows a sectional view along line II-II in Fig. 1, a picture being additionally indicated in Fig. 2,

Fig. 3 is a schematic plan view of the connecting element from the front,

Fig. 4 is a schematic plan view of the connecting element from behind,

Fig. 5 is a schematic sectional view along line V-V in Fig. 3,

Fig. 6 is a schematic sectional view of a spacer along line VI-VI in Fig. 1, and

Fig. 6 is a schematic perspective view of a wall mounting.

A picture frame according to the invention onto which a picture can be releasably stretched comprises four frame ledges 10 arranged at right angles with respect to each other in the illustrated embodiment. The frame ledges 10 are releasably interconnected by connecting elements 12 (Fig. 3-5). Further, a wall mounting 14 onto which an upper frame ledge 10 can be laid or into which it can be inserted is provided for mounting the picture frame. In the illustrated embodiment, two spacers 16 (Fig. 6) are provided at the

lower frame ledge 10. Thereby, the picture frame can be held at a distance to the wall so that visible dust marks and the like are avoided when the picture is taken down.

The frame ledges are profile parts having the same cross section over the entire length (Fig. 2). In the illustrated embodiment, the frame ledges comprise a closed insertion pocket 18. One of the two rod-shaped projections 20 (Fig. 3) of the connecting elements 12 is inserted into the insertion pocket 18.

At a ledge rear side 22 of the frame ledge configured as a hollow profile, a part of a Velcro band or Velcro fastener is provided as a first fastening element 24. The fastening element 24 can be connected with the rear side 22 by glueing. The first fastening element 24 is arranged in a groove 26 of the frame ledge 10. The position of the first fastening element 24 is defined by the groove 26. The groove 26 is formed by two projections projecting vertically from the rear side 22 and extending over the entire length of the frame ledge 10.

At its outer border, a picture 32 comprises second fastening elements 34 cooperating with the first fastening elements 24. Preferably, they are formed by a corresponding Velcro band as well. The second fastening element 34 can be sewn on the picture which preferably consists of cloth.

At a ledge front side 36 of the frame ledge 10, a protrusion 38 is provided which preferably extends over the entire length of the frame ledge 10 as well. Thereby, it is ensured that the picture 32 does not contact the front side 36 of the frame ledge 10 but has a distance there to. This is particularly advantageous with light-colored pictures since otherwise, the frame ledges 10 would be visible in the border portion of the pictures.

Because of the L-shaped configuration of the insertion pocket 18, it is possible to provide a groove 40 respectively extending over the entire length and serving to receive the wall mounting 14 and/or the spacers 16 (Fig. 1). The groove 40 is respectively located at the ledge insides 42, the ledge insides facing each other when the frame is assembled.

Preferably, the frame ledges 10 are configured as hollow aluminum profiles. Since all the frame ledges of a picture are identical, the production costs can be significantly reduced.

In the illustrated embodiment, the connecting elements 12 comprise two rod-shaped projections 20 arranged at right angles to each other (Fig. 3), which are also L-shaped in cross section (Fig. 5). These L-shaped rod-shaped projections 20 are inserted into the insertion pockets 18 (Fig. 2) for being connected with the frame ledges 10. To generate a sufficient but not too high friction between the rod-shaped projections and the inner walls of the insertion pockets 18, the rod-shaped projections 20 comprise lamellae 44,46 as friction elements (Fig. 5). In the state of being inserted, the lamellae 44,46 contact the inner walls 48 and 50 (Fig. 2) of the insertion pocket 18, respectively. In doing so, the lamellae 44,46, which have an elastic configuration, are slightly deformed. By the provision of elastic lamellae 44,46, manufacturing tolerances can be evened out, on the one hand, and a secure hold of the rod-shaped projections 20 in the insertion pocket 18 can be guaranteed, on the other hand. Since the lamellae 44,46 are made of a more elastic plastic than an L-shaped carrier 52 of the rod-shaped projection 20, the rod-shaped projection 20 consists of two parts, an L-shaped inner part 54 being inserted into the L-shaped carrier 52. The L-shaped inner part 54 is made of a more elastic plastic and forms the lamellae 44,46. The L-shaped inner part 54 can be fastened in the carrier 52 by glueing. Preferably, dovetail-shaped projections 56 are provided at the carriers 52 (Fig. 4) so that the inner part 54 can be connected with the carrier 52 by inserting or pushing it in.

Because of the L-shaped configuration of the insertion pockets, the individual frame ledges 10 cannot be fitted together with the connecting elements 12 in a wrong manner. The reason for this is that the legs of the L-shaped insertion pocket are of different lengths. Additionally, the two legs have different widths. Since it is not possible to fit together the frame ledges 10 and the connecting elements 12 in a wrong manner, it is not possible that first fastening elements 24 are located on different sides of the assembled frame, either. Thus, this configuration of the insertion pockets 18 has the advantage that it is easily possible to fit together the picture frame even without an instruction for use and that a correct assembly of the frame parts is guaranteed.

Further, the connecting elements 12 comprise a corner portion 58. The two rod-shaped projections 20 are connected with the corner portion 58 at right angles. The thickness and the height of the corner portion 58 respectively correspond to those of the frame ledges 10 so that a front side 60 of the corner portion 58 is arranged in one plane with the front side 36 (Fig. 2) of the frame ledge 10. Further, two protrusions 62 protruding from the second plane are provided in Fig. 3, which are in alignment with the protrusions 38 (Fig. 2). The protrusions 62 also serve to prevent the picture 32 from lying on the front side 60 of the corner portions 58. Thus, the outer edges of the frame are formed by a circumferential rim at the outer front edge, said rim being formed by the protrusions 38,62.

At a rear side 64 of the corner portion 58, a fastening element 66, preferably in the form of a Velcro fastener, is provided. Thus, the first fastening elements 24 as well as the fastening elements 66 form a self-contained frame to which corresponding fastening elements 34 provided at the picture 32 can be mounted. To be able to arrange the frame at a distance to the wall, spacers 16 are provided (Fig. 1). The spacers 16 (Fig. 6) are also arranged in the groove 40 extending over the entire length in each frame

ledge 10. In cross section, the spacers 16 substantially have the shape of an L and comprise a leg 68 projecting into the groove 40. This leg comprises lamella- or web-shaped projections 70 so that the leg 38 is clampingly held in the groove 40 by friction.

A second leg 72 of the spacer 16 is arranged at right angles to the first leg 68 and has a throughbore 74. By means of the throughbore 74, the spacer 16 can be mounted to the wall and thus simultaneously offers a theft protection. This mounting can be omitted if the spacer 16 only has to operate as a spacer. To avoid damage to the wall, the leg 72 has a rubber ring 76 at the side facing the wall.

The wall mounting 14 (Fig. 7) comprises an integrated spirit level 78 to be able to align the wall mounting 14. For fastening the wall mounting 14 at the wall, two mounting slots 80,82 are provided which are arranged at an angle of 90° with respect to each other. Further, the wall mounting 14 has a projection 84 that can be fitted into the groove 40 (Fig. 2) of the frame ledges 10. Hanging up the picture at the wall mounting 14 is thus effected by simply fitting the upper frame ledge 10 of Fig. 1 onto the projection 84 so that the latter projects into the groove 40.

Further, the wall mounting 14 comprises two spacing projections 86,88 extending over the entire length of the wall mounting 14 in the illustrated embodiment. The spacing projections correspond with the spacers 16 (Fig. 6) so that the picture hangs in a vertical plane or has a horizontal distance to the wall. The spacing projections 86,88 are not required when the picture is to be hung at the wall directly and the spacers 16 are thus omitted as well. In this case, the projections 86,88 would only have such a length that they would span the distance between the groove 40 and the wall.

The spacing projections are arranged such that the mounting slots are arranged between at least two of these projections. Thereby, a tilting of the

wall mounting is avoided. The spacing projections, however, need not extend over the entire length of the wall mounting. Particularly, it is also possible that the spacing projections extend vertically to the illustrated projections 86,88 or have a different angle. It is only important that a tilting of the wall mounting 14 is avoided.